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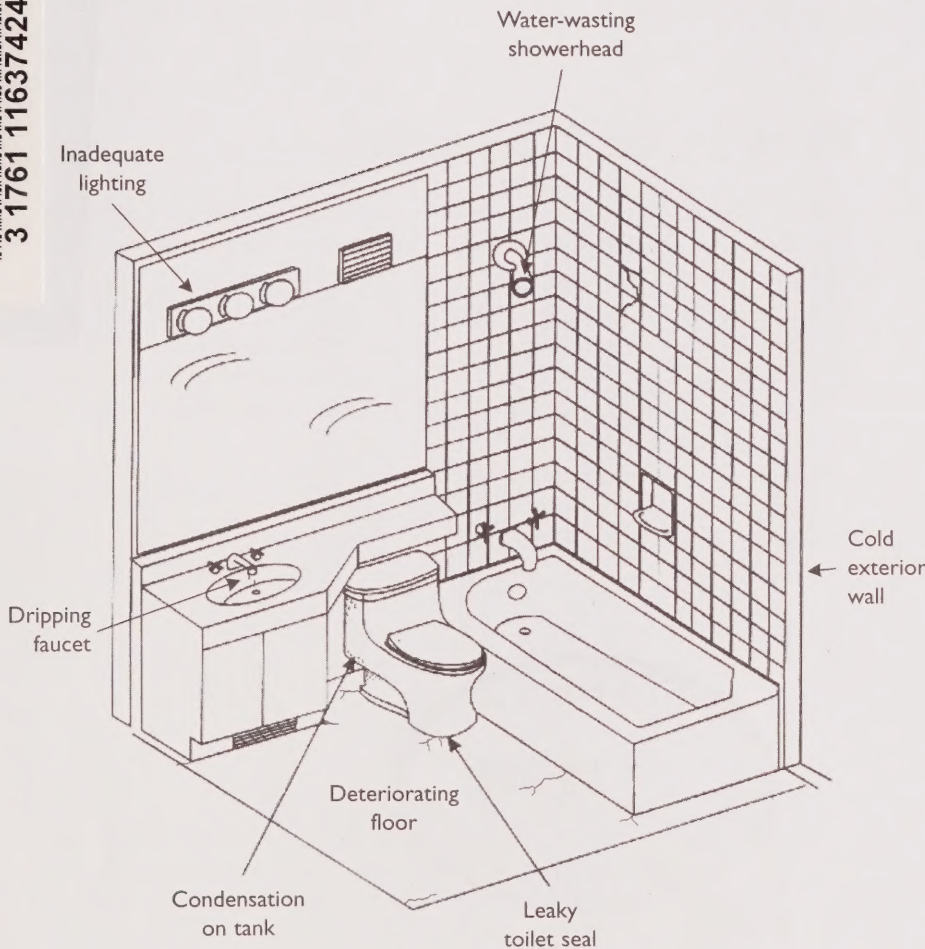
ABOUT YOUR HOUSE

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BEFORE YOU START RENOVATING YOUR BATHROOM

Renovating your bathroom is a great way to add value to your home—both for your family's daily living and for future resale.

Before you decide to go ahead with a renovation, it's critical to have a good idea of any underlying problems that could cause unwelcome and costly surprises. Taking time to find problems before you start your renovation will save you money, protect the indoor air quality and preserve the durability and structure of your home.



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Common Situations

A bathroom renovation is one of the most common home improvement projects. Bathroom renovations come in all types and sizes—from a simple update of the flooring, to enlarging the room and replacing all fixtures and finishes.

Your project is unique, but your reasons for renovating will probably fall into these common categories.

- **Size and design**—The room may be small or poorly designed.
- **Fixtures**—The fixtures may be outdated, small, hard-to-clean, leaky, cracked or inefficient.
- **Structural**—There may be problems that require structural changes or repairs.
- **Moisture**—Excessive bathroom moisture may have deteriorated the bathroom surfaces, affected the indoor air quality or jeopardized the structure of your house.
- **Plumbing and electrical**—If your house is 30-40 years old, the plumbing and electrical services may be outdated and need upgrading. Houses built prior to 1950 often have lead piping that may pose a health hazard.
- **Heating and ventilation**—Bathrooms are often cold because of poor insulation or poor heat delivery. Ventilation is often inadequate, non-existent or causing secondary problems that need to be fixed.

Healthy Housing™

Renovating is an ideal time to make your house healthier for you, the community and the environment. When doing your bathroom renovations, be sure to consider:

- **Occupant health**—moisture control strategies to prevent mold growth, low emission materials and products.
- **Energy efficiency**—effective air barriers and insulation, energy efficient task lighting.
- **Resource efficiency**—water-conserving appliances and fixtures.
- **Environmental responsibility**—durable materials that will last longer and minimize future waste in landfill sites, recycling fixtures to reduce construction waste.
- **Affordability**—energy and water efficient fixtures to reduce ongoing operating costs, durable products to reduce future repair and replacement expenses.

House as a System

A house is much more than just four walls and a roof—it's an interactive system made up of many components including the basic structure, heating, ventilating and air conditioning (HVAC) equipment, the external environment; and the occupants. Each component influences the performance of the entire system. A renovation provides an opportunity to improve how your house performs.

Bathroom renovations often include changes to HVAC equipment that can improve moisture management in the house. Structural changes may improve air sealing and insulation, resulting in increased occupant comfort and house durability.



Avoid Surprises

Before you start renovating, you'll want to think about your bathroom, your needs and your budget. Look carefully for signs of deterioration and the possible causes. This will save you money and also help you to

be better informed if you're dealing with contractors. Reflecting on your project will also help you to decide whether you need the services of a professional. Being unsure of what needs to be done, recognizing that

the job is very complicated, or that you don't have the time or energy to do the work, are good reasons to hire a professional renovator.

Ask yourself...

Consider your options...

...and if you don't

Size and design

- What aspects of the current bathroom need to be changed?
- Is the layout convenient? Is there enough storage?
- Does the bathroom meet the needs of everyone in the household, including anyone with special needs, extended family and guests?
- Choose a design option that meets your existing and future needs. This may be a simple renovation to replace fixtures or a complex project to change the layout, enlarge the bathroom or add an extra bathroom.
- The layout may not be flexible enough to meet existing or future needs for space and storage.
- Also, the layout may not be suitable for anyone with special needs such as wheelchair accessibility.

Fixtures

- Are the fixtures or seals damaged, cracked or leaky?
- Is the styling outdated?
- Are fixtures water and energy efficient?
- Is there often condensation on the toilet tank?
- Replace or repair damaged, cracked, leaky fixtures or seals.
- Choose fixtures that enhance the appearance of your bathroom while conserving water and energy.
- Install an insulated toilet tank to keep the tank surface warmer.
- Plumbing leaks will continue to cause damage to finishes, the house structure and will promote mold growth.
- Outdated fixtures usually mean higher energy and resource costs. New toilets can save more than 70% of water per flush. Low-flow showerheads can save 60% on water usage. Compact fluorescent light fixtures are four times more efficient than standard incandescent bulbs.
- Cold toilet tanks are prone to condensation that leads to moisture problems.

Rewards

- Correcting structural flaws, fixing leaks and making sure that all services are adequate before renovating will make renovations look better, work better and last longer.
- Using low-odour and easy-to-clean finishes will improve IAQ and help prevent mold growth.
- A warm, comfortable, attractive bathroom can contribute to a safe, relaxing lifestyle.
- A bathroom renovation typically offers a 64-71% return on your investment, meaning increased value of your house for resale

Ask yourself...

Consider your options...

...and if you don't

Structural

- Which walls are load bearing? Will they need to be cut or removed as part of the renovation?
- Are there any cracks, slopes or bulges that might mean that the floors or supporting members are deteriorating or inadequate?
- Are the walls deep and strong enough to allow installation of grab bars, new windows, plumbing or ducts?
- Are exterior walls, floors or ceilings cold or drafty? Is it noticeably cold while taking a bath?
- Assess the structure carefully. The proposed renovation must either fit the existing structure or the required structural changes must be possible. Expert help may be needed.
- Repair or upgrade structural elements so that they are able to meet expected loads.
- Install structural blocking or backing as needed for grab bar installations. Build out walls to accommodate new windows, plumbing or ducts.
- Insulate and air seal the exterior wall, ceiling or floor assemblies to provide warm surfaces and a draft-free space.
- Improper structural changes, new loads or proceeding with changes that stress the structure may cause wall settling or collapse.
- Ignoring the underlying cause of bulges, slopes or cracks can result in recurring problems.
- Installing structural blocking for grab bars after renovations are complete will cause expense and disruption. Insufficient wall cavities may limit or prevent installation of windows, plumbing or proper ducts.
- Poorly insulated exterior surfaces, poor quality windows or poor air sealing will result in cold surfaces that cause discomfort and are prone to condensation, which can lead to mold growth.

Moisture

- Are any finishes moisture damaged?
- Are there water stains or visible mold growth on any surfaces?
- Is there any blistering or peeling paint?
- Are any surfaces buckled, swollen or rotten?
- Is there any chipped or cracked grout or caulking?
- Determine if moisture comes from building leaks, plumbing leaks or high humidity. Fix the causes of the deterioration—for example, repair roof, wall or window leaks. Repair or replace all water damaged or deteriorating elements.
- Clean up visible mold growth following CMHC guidelines.
- Ventilate to control excess humidity.
- Maintain grout and caulking to prevent water access to cavities.
- Choose low-odour, low-toxicity materials and finishes to minimize the effects on indoor air quality (IAQ).
- Unresolved water problems will cause renovations to deteriorate quickly, whether the water comes from building leaks, plumbing leaks or the high humidity generated by bathroom activities. Leaks may contribute to mold growth and result in serious IAQ problems.
- Hiding moisture damage behind new finishes can cause deterioration and mold growth to continue.

Plumbing and electrical

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| <ul style="list-style-type: none"> • Are there any signs of leaks such as mold growth, soft drywall or rotting materials? • Is there sufficient water pressure? • Do the pipes make a banging noise (water hammer)? • Does water drain slowly? Are there any unusual noises or smells coming from the drains? • If the house is pre-1950, are there any lead or galvanized steel waterpipes? • If the house is more than 30 years old, is the electric service and wiring safe and adequate? • Is the lighting adequate, providing good overall and task area light? | <ul style="list-style-type: none"> • Repair any plumbing leaks. Upgrade plumbing to meet current codes and the needs of new fixtures. • Install larger diameter water pipes to allow greater flow or pressure balancing valves. • Provide an air cushion to eliminate water hammer. • Ensure that the drainage system is sufficiently vented and that proper traps are installed. • Replace lead or corroded metal pipes. • Have an electrician inspect the electric service and wiring. Repair and upgrade electrical service and wiring if needed. Equip outlets with ground fault circuit interrupters for safety. • Update lighting so that it is adequate and energy efficient. | <ul style="list-style-type: none"> • If plumbing problems aren't repaired, deterioration will continue and mold will grow. • Poor water pressure and water hammer problems will continue. • Plumbing problems such as slow drains or smells from poor venting will still be annoying, may get worse and be a source of poor IAQ. • Lead piping and corroded metals can contaminate water and leak. • Electrical service, wiring and outlets may be inadequate or unsafe for increased loads (e.g., whirlpool tubs or space heating). New lights or outlets may overload existing wiring. • Lighting may be poor and use energy inefficiently. |
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Heating and ventilation

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| <ul style="list-style-type: none"> • Is the bathroom cold? • Does condensation form on windows, mirrors or other surfaces? • Is there a stale, musty smell? • Is there an exhaust fan that doesn't work? Does the fan vent directly to the outside? Is the duct insulated where it passes through unheated spaces? | <ul style="list-style-type: none"> • Provide an adequate heat source. • Ideally, install a whole house ventilation system, including a heat recovery ventilator. • If the whole house system is not an option, install a quiet exhaust fan with adequate airflow capacity to handle excess humidity. The fan should have a sound rating of two sones or lower and must vent properly to the outside. | <ul style="list-style-type: none"> • Problems can arise if heating, ventilating or air conditioning (HVAC) needs cannot be met by the capacity of the services available. The heating supply must be enough for comfort. Proper ventilation is needed to control excess humidity and to remove indoor pollutants. • HVAC problems affect how the entire house functions as a system. |
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Skills to Do the Job

A homeowner with good fix-it skills may be able to do some of the work including:

- Removing old fixtures.
- Gutting old wall surfaces.
- Removing non-load bearing walls.
- Fixing roof or window leaks.

• Insulating, installing a vapour barrier and air sealing.
 Serious structural work may require the services of a professional renovator. You'll also likely need an electrician for any new wiring, a plumber for the plumbing work and a heating contractor

to install or move heating or ventilation outlets. You may want to hire tradespeople to do the structural work, roofing, window repairs or installation and any exterior wall repairs.

Use the Bathroom Assessment Worksheet to record the present condition, any problems in your bathroom and preliminary costing.

Bathroom Assessment Worksheet			
Room dimensions			
	Present condition/problems	Options or upgrades	Cost
Ceiling and Finishes			
Walls and Finishes			
Floor and Finishes			
Room Lighting			
Task Lighting			
Windows			
Doors			
Vanity/Cabinets			
Sink			
Toilet			
Bathtub			
Shower			
Grab Bars			
Faucets			
Plumbing			
Electrical Service and Wiring			
Heating and Cooling			
Ventilation			
Other			

Costing Your Project

The cost of essential repairs will depend largely on the deterioration of the existing structure and how much professional labour is needed. Use these categories when costing your project.

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| <input type="checkbox"/> Design changes. | <input type="checkbox"/> Plumbing and electrical problems. |
| <input type="checkbox"/> Structural considerations. | <input type="checkbox"/> Heating and ventilation. |
| <input type="checkbox"/> Fixtures. | <input type="checkbox"/> Permit and inspection costs. |
| <input type="checkbox"/> Moisture damage and deteriorated finishes. | |

Other useful information from Canada Mortgage and Housing Corporation

Clean-Up Procedures for Mold in Houses,
\$3.95 (61091)

Flexhousing: Homes that Adapt to Life's Changes,
\$9.95 (60945)

Healthy Housing Renovation Planner,
\$34.95 (60957)

Homeowner's Inspection Checklist,
\$19.95 (62114)

Renovator's Technical Guide,
\$34.95 (61946)

The Clean Air Guide: How to Identify and Correct Indoor Air Problems in Your Home,
\$5.95 (61082)

About Your House fact sheets, Free

Measuring Humidity in Your Home, (62027)

After the Flood, (60515)

Fighting Mold, (60516)

How to Hire a Contractor, (62277)

*Before You Start Renovating Your Basement—
Structural Issues and Soil Conditions,* (62248)

To order these publications (order number is shown in brackets) and to find out about other CMHC publications, contact:

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